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NOTES ON TRIPHORA TRIANTHOPHORA IN ONTARIO

C. Harold Zavitz and Lulu O. Gaiser

Early in the summer of 1950, while the senior author was inspecting a woodlot in south-eastern Essex County, his attention was attracted by a small plant (approximately four inches tall) which was unlike any plant observed by him previously.

The plant had a fragile semi-transparent appearance and was of a light green or yellowish green color. Stem leaves were few in number, and small, being less than one-half inch in length, oval in outline, rounded to a triangular tip, and with a sheathing or clasping base. Subsequent visits were made to the area and other similar plants, about a dozen in number, were found in various parts of the woodlot. On August 21st the first flowers were observed and it was then recognized as a member of the ORCHIDACEAE.

By reference to "Gray's New Manual of Botany (Seventh Edition)", the plant was determined as *Pogonia trianthophora* (Sw.) BSP., although it was not recorded as from Ontario. Britton and Brown's Illustrated Flora further substantiated the original identification. This plant is given in "Gray's Manual of Botany (Eighth Edition)" and also in "Native Orchids of North America" by Correll as *Triphora trianthophora* (Sw.) Rydb. Neither of these authoritative works records it from Ontario, but Correll does say "from Canada (old record) through New England," etc.

The flowers arose from the axils of the leaves of the upper stem, the uppermost of the leaves being reduced in size so as to appear almost bract-like. The number of flowers on a plant varied from one to four.

The flowers resembled, in general form, those of *Pogonia ophioglossoides* (L.) Ker, but were much smaller in size being just over half an inch long. The color was milk-white to translucent. Under a low power lens, the papillose protuberances on the lip appeared almost crystalline. The crests of the lip showed a slight green coloration and a very slight suggestion of pink was observed on close inspections of some other portions.

On specimens examined, one or two tubers were attached to the end of the main root. These tubers were ovoid with the distal ends somewhat pointed and the proximal ends quite blunt. One plant obtained on August 21st was preserved. On September 12th, the same author again visited the area, and a specimen with a well-developed seed capsule was obtained. This specimen and the one obtained previously on August 21st are preserved in the author's herbarium.

In 1951, the area was inspected once, but no plants were observed. This peculiarity seems quite characteristic of this group of orchids, and may partially account for its lack of detection in an area so well populated. In 1952, I was in England and therefore unable to check the locality.

The next inspection of the area was on the 14th of August, 1953, when a specimen in flower was obtained. This was delivered in a fresh state that day to Dr. L. O. Gaiser who was summering at Crediton, Ontario, and she confirmed the original determination. The specimen was later verified by Mr. Charles Schweinfurth, of the Oakes Ames Orchid Herbarium and it has been placed in the Gray Herbarium, Harvard University. While obtaining this specimen a number of tubers were discovered which were not closely attached to foliaceous plants, but appeared to be evidence of the subterranean process of vegetative propagation which obtains in this and some related species. These tubers were usually in thick beds of hardwood leaves and humus, and somewhat remote from the mineral soil. Both authors visited the area in August, 1954, and saw at least twelve specimens in two neighbouring patches. Two inspections of the area in 1955 failed to reveal any plants.

The plants occurred in a sandy soil rich in humus, in medium to heavy shade of the native hardwood forest. The chief species of trees in the area in which this plant was found were

beech, hard maple, red oak, white elm, hickory and red ash. The Carolinian flora was represented there by tulip, chestnut, and sassafras, and in the general locality by flowering dogwood, sour gum, hop tree, papaw, and red mulberry.

Some authors class this orchid as a saprophyte. However, the amount of green in the plants observed would indicate that it is not entirely saprophytic and that under certain circumstances, at least, this species has the ability to develop chlorophyll and thus manufacture some of its own plant food.

The earliest reference to *Triphora trianthophora* (Sw.) Rydb. as having come from Canada, is in the Botanical Register (1825) t. 908. There, after the description of *Pogonia pendula*, John Lindley states; "Roots of this curious little plant were collected in Canada, by Mr. David Douglas, for the Horticultural Society, and flowered in an open border in the garden at Chiswick in August, 1824." A later paragraph includes the statement "Mr. Nuttall says it is parasitic round the roots of beech trees from New York to Kentucky, and that he has found it also in Canada."

W. J. Hooker, in Flora Boreali-Americana 11, p. 202 (1840), merely lists the plant referring to the above reference, but adds the name of Goldie to the two previously given after "Hab. Canada." Thus concerning the same plant, J. Macoun, in the Catalogue of Canadian Plants IV p. 11 (1888), writes: "Damp woods, Canada (Goldie fide Hooker)." He adds: "We have never seen a Canadian specimen of this species. It should be looked for in south-western Ontario."

While reports of this plant from Canada have been dropped from modern manuals, such as Gray's Manual (Seventh and Eighth Editions), Britton and Brown, and Gleason 1952, Correll (1950), referring to the "old record from Canada," gives credit to David Douglas for its introduction to England at Chiswick in 1824, as referred to by Lindley.

In the Journal kept by David Douglas during his travels in North America 1823–27, Wm. Wesley & Son, London (1914), his journey can be followed: On October 1 (1823) he crossed the Niagara River at Queenston, thus passing into the U. S. A., for "Lewiston on my way to Lockport." Then on page 17 begins the report: "Lockport, Friday, 3rd.—In company with

Mr. Thomas who kindly offered me the 'use of his person,' as he said, I visited woods north of Lockport which were almost all beech; we found two specimens of *Corallorrhiza*—one like *innata* of Britain, the other a small one. I secured plants of them"; continuing on page 18 we find: "the soil was dead leaves, very dry. Along with them grew *Triphora*,[1] also a *Cypripedium* in partly shaded parts, soil dry sandy peat; *Viola* sp. leaves round, large, flowers small white striated."

There is an appendix "Plants introduced by David Douglas during the years 1826–34" and on p. 334 is listed "*Pogonia pendula*, Lindl. in Bot. Reg. *t* 908-North America."

With these as the only references to *Pogonia* or *Triphora*, it would seem that if the belief that the species was collected in Canada is based on Douglas' collection, it is ill-founded.

A search has since been made for specimens or a report of a collection of this plant in Canada that would confirm the "old record." Negative reports to inquiries for Canadian specimens have come from the curators of the following herbaria: National Museum and Dominion Experimental Farm in Ottawa, Botanical Garden in Montreal, the Universities in Toronto, Kingston, London, Hamilton and the Agricultural College at Guelph, Ontario. There is also no former specimen from Canada in the Gray Herbarium.

When the inquiry was sent to the first of these herbaria, Mr. A. E. Porsild kindly offered to look for specimens of *Triphora trianthophora* at Kew and the British Museum when he visited those herbaria during the year 1954–55. We are deeply indebted to him for his help.

He has reported the following: At Kew, under the above name are seven sheets, each with 1–3 separate collections. One sheet, stamped "Herbarium Hookeranium 1867," contains three collections, two of which are labelled *T. pendula* with given localities in the U. S. A. and a third labelled "*Arethusa pendula*," written on the original ticket, and in another hand, "Canada Gouldie." On a second sheet are collections labelled *T. pendula* likewise "Herb. Hook. 1867," each bearing a collector's name but no other data. That in the lower right corner, in Hooker's hand, bears the name "Douglas." The rest are all specimens from the U. S. A.

[1] *Pogonia* Benth & Hook"

Mr. Porsild concluded, "Thus at Kew there is only one specimen definitely labelled Canada. Possibly 'Gouldie' is meant for 'Goldie'."

He further reported that no Canadian specimen co ɹ be found at the British Museum.

While there is neither evidence on the sheet bearing the Douglas specimen nor any record in his own Journal that he collected this plant in Canada, both Hooker's Herbarium and his Flora confirm Goldie's collection of it here.

FROELICHIA GRACILIS IN MARYLAND

S. F. Blake

Froelichia gracilis (Hook.) Moq., of the family Amaranthaceae, is regarded as indigenous in the region west of the Mississippi River from Nebraska or Iowa to Colorado, south to Texas, Arizona and Chihuahua. Its extension of range eastward in recent years even to several of the coastal states indicates the possession of a roving disposition which might complicate the problem of determining precisely its original native habitat. Standley, in 1916, did not know it east of the Mississippi, for he assigned a range from Iowa to Colorado, southward to Arkansas, Arizona, and Chihuahua (North Amer. Flora **21:** 127). The seventh edition of Gray's Manual (1908) and both editions of Britton and Brown's Illustrated Flora (the second in 1913) had given a similar but more restricted range. In the 8th edition of Gray's Manual (1950) Fernald assigned essentially the same range as Standley had done, but added: "Adventive eastward to New York, New Jersey, and Virginia."

The first report from east of the Mississippi appears to have been that of H. D. House in 1924 (N. Y. State Mus. Bull. **254:** 303) recording it from railroad tracks at Despatch, Monroe County, New York, 1920, where it was found by D. M. White. Apparently the species has been collected only once again in New York, on waste land near railroad tracks at Cold Spring, Philipstown, Putnam Co., 22 Aug. 1953, by K. L. Brooks, S. J. Smith, and J. J. Wurdack. In 1929 H. C. Benke (Rhodora **31:** 146) reported it from Cairo, Illinois, where he had collected it in 1928. C. C. Deam in 1940 (Fl. Indiana 431. map 887)

listed it from four counties in Indiana but indicated its presence in five on his map. He had first found it in 1930 along a railroad about four miles south of Vincennes, in almost pure sand, and three years later found that it had spread a quarter of a mile along the track. He predicted that it would "probably become a weed in the sandy area of this part of the country" (very likely referring to the sandy region around Lake Michigan in Indiana and Illinois), but there are only four additional counties recorded in the 14 annual supplements to his Flora of Indiana that have been published to date.

The eastward spread of the species has taken place almost entirely along railroad tracks. Of 24 specimens in the herbarium of the University of Illinois coming from 19 different counties in all parts of that state, the data for which have kindly been supplied by Dr. G. Neville Jones, 20 were collected along railroads, 2 by roadsides, and for 2 the habitat was not specified, as is the case also with Benke's original collection in the Chicago Natural History Museum herbarium. Of 16 specimens from other states, cited below, all but the 2 from New Jersey were found along railroads; the New Jersey specimens were collected along a path and in sandy fields, respectively. All four of the Indiana localities given in Deam's Flora were along railroads.

The occurrences of this species in the eastern states as represented by specimens in the Gray Herbarium (GH), Department of Botany of the University of Illinois (ILL), New York Botanical Garden (NY), New York State Museum (NYS), Ohio State University (OS), Philadelphia Academy of Natural Sciences (PH), and United States National Herbarium (US) are summarized here. Dr. R. C. Rollins (GH), Dr. G. N. Jones (ILL), Dr. Arthur Cronquist (NY), Stanley J. Smith (NYS), Miss Clara Weishaupt (OS), and Dr. C. Earle Smith (PH) have kindly supplied the data for their respective institutions. Individual collections have been cited from only a single herbarium, but some of them are also represented in other institutions.

New York: Monroe Co., 1920 (GH); Putnam Co., 1953 (NYS). New Jersey: Camden Co. 1944 (PH), 1946 (GH). Pennsylvania: Berks Co., 1945 (PH); Delaware Co., 1942 (GH); Lackawanna Co., 1926 (PH); Montgomery Co., 1944 (PH); Northampton Co., 1946 (PH); Schuylkill Co., 1944 (GH). Virginia: Dinwiddie Co., 1939 (GH); Henrico Co., 1940

(GH); Sussex Co., 1939 (GH). OHIO: Scioto Co., 1951 (OS). INDIANA: Knox Co., 1941 (NY); La Porte Co., 1942 (NY); reported from 7 other counties. ILLINOIS: First record, 1928, Alexander Co; represented (ILL) by specimens from this and 18 other counties in all sections of the state.—Not reported from West Virginia or Kentucky.

On 29 Sept. 1954 and again a week later I had occasion to investigate an infestation of this plant on the farm of J. Thomas Simpson in Odenton, Anne Arundel County, Maryland, which apparently provides the first record for the species in that state. Thousands of specimens were growing in sandy soil on the edge of a cornfield and among the low weeds (*Diodia*, *Digitaria sanguinalis*, etc.) on the uncultivated border of the field, mostly in an area about 150 by 50 feet, in places very thickly, in others sparsely, and there were scattered plants in other parts of the field and in an adjoining pasture. Mrs. Simpson informed me that the plant had first appeared there about 5 or 6 years ago, but had not become abundant until 1953. Their cattle will not eat it. The specimens growing in loose open sand were very well developed, up to about 60 cm. high with several assurgent basal branches as long as or longer than the stem; those growing among dense weeds were mostly simple and shorter.

The nearest railroad to Mr. Simpson's place is a spur track of the Pennsylvania RR. about a mile away, running in to the Bowie Race Track (in Bowie, Prince Georges County) and used in season for the transport of horses and their fodder and bedding. Because of the plant's close association with railroads, it seemed reasonable to suspect that this might have been the source of introduction to Mr. Simpson's farm, particularly since his daughter, Miss Marion E. Simpson, informed me that her father had occasionally brought in straw from the race track. On 25 July 1955, when I visited the spot in company with Miss Simpson and Paul G. Russell, several score specimens were found on the railroad tracks between the stables and the Administration Building, where the horses and their supplies are unloaded.

The weedy nature of the plant is emphasized by my own experience with it. I collected a number of specimens on my first visit to the farm, and must have unintentionally picked up a number of fruits on my person as well, for the next morning, in my home in Virginia, I found in my bed a number of rough

little objects which felt like small pebbles but turned out to be the fruiting calyces of this plant. They must have been carried home attached to my stockings or trousers or in my shoes, but I am puzzled to explain their transfer to the bed. They are unpleasant to walk on barefooted, but not nearly as much so as the fruits of *Tribulus* or *Cenchrus*. However interesting the plant may be as an addition to the flora of Maryland, that state has no need of any more weeds, and Mr. Simpson is attempting to eradicate it by cultural treatment before it spreads further. The railroad tracks at Bowie are sprayed regularly each summer, but it is very improbable that this procedure would have much effect on the multitude of seeds that must have been scattered previously from the plants growing there.— PLANT INDUSTRY STATION, BELTSVILLE, MD.

SHORTIA GALACIFOLIA IN GRAY'S MANUAL RANGE[1]

Dorothy L. Crandall

Shortia galacifolia has been called by C. S. Sargent (1888) "one of the rarest and most interesting plants of North America" and since the first pressed specimen of *Shortia* was rediscovered by Asa Gray among Michaux's unknowns, search for this species has intrigued many botanists.

In a recent article in Rhodora, P. A. Davies (1955) lists seven counties in which *Shortia* has been found, one in Georgia, two in South Carolina, and four in North Carolina. No natural colonies have been reported from outside this rather restricted area and yet ecologically there are many similar habitats in other mountainous sections of the Southeast. Aware of its limited distribution, the author was somewhat surprised to discover a flourishing colony of *Shortia* along a creek in Amherst County, near Lynchburg, Virginia.

On the relatively steep east-facing bank (altitude approximately 650 feet) of this small creek, just a few feet above the water, was a patch of *Shortia* covering an area about three by six feet. On this date, April 9, 1955, only a few scattered blossoms were evident, varying from white to pale pink. Most

[1] Contribution from the Botanical Laboratory, The University of Tennessee, N. Ser. No. 169.

of the earlier flowers had withered without forming fruit. Photographs were taken and specimens were collected. The latter are being deposited at the Gray Herbarium, the U. S. National Herbarium, and the herbaria of The University of Tennessee and Randolph-Macon Woman's College.

Downstream a few feet away from the original group, a small clump of three plants was growing. A search upstream disclosed three more plants about twenty feet away and another small group about four feet away. The stream was traced to its source, only a few hundred feet, but no more plants were seen.

The author made two subsequent trips to the site, one in the company of Franklin Flint of Randolph-Macon Woman's College and the other with Mr. Flint and Ruskin Freer of Lynchburg College. About 300 feet downstream at a point just above where this creek joins a still larger creek that flows into the James River about a half mile away, another clump of *Shortia* approximately two by three feet was located on a knoll overhanging the creek. A search for several miles up the larger creek failed to disclose any additional stations.

The first colony appeared to be well established and had spread both by stolons and by seeds. On bare and mossy soil and only seen when the overhanging leaves of *Shortia* were lifted, were dozens of seedlings of various sizes. In addition to these a few seedlings were observed several feet away from the parent plants, the seeds having washed down the steep bank. Bailey's Standard Cyclopedia of Horticulture (1933) states "It is difficult to procure seed as the flowering stem usually withers away before maturing, though shortia is readily propagated by division and runners." C. F. Jenkins (Arnoldia, 1947) adds "Apparently no plants were propagated in this way," referring to attempted propagation by seeds. On a visit to the area near the end of May a few flowers, perhaps a dozen or so in all, had formed capsules.

The conspicuous canopy trees included *Nyssa sylvatica*, *Fagus grandifolia* and *Liriodendron Tulipifera*. In the understory were *Cornus florida*, *Hydrangea arborescens*, *Alnus serrulata* and *Kalmia latifolia*. Intermingled with the colony were *Polystichum acrostichoides*, *Dryopteris noveboracensis* and *Athyrium*

Filix-femina. Important among the low flowering herbs were *Asarum virginicum*, *Iris cristata* and *Medeola virginiana*. *Galax aphylla* was abundant, the bank of the stream lower down carpeted with blankets of it.

A search of the area disclosed no old gardens from which *Shortia* could have escaped and local inquiries have yielded nothing as to the origin of these plants. The creek is part of a small farm which has changed hands many times and until the present owner purchased the land about ten years ago, no one had taken any interest in improving the property. Any information as to the possible introduction of these plants would be appreciated.

However this species may have first gained its foothold on this creek bank in Virginia, it is of interest that *Shortia* is flourishing and spreading both by seeds and stolons in an area within the range of Gray's Manual and considerably north of its previously known distribution in the Carolina mountains.—RANDOLPH-MACON WOMAN'S COLLEGE, LYNCHBURG, VIRGINIA.

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NOTES ON UTRICULARIA BIFLORA AND U. FIBROSA

LEONARD J. UTTAL

THE Bladderwort, *Utricularia biflora* Lam., grows in certain wet places in Coastal Plain pine barrens, from southeastern Massachusetts to Florida, Texas, and Oklahoma. Rare and local in the north, it nevertheless seems odd that but one station, herewith reported for the first time, seems to be known for this species in New Jersey, where likely habitats are so frequent.

This station is on the Public Hunting and Fishing Grounds, at Archer Corner, Ocean County, New Jersey, where the writer collected plants in August, 1954. Less than a half-meter square, the colony grew in water just a few centimeters deep, the submersed parts enmeshed in muck, amidst remnant cranberry and sphagnum of a receding bog, well invaded by upland flora, perhaps as a result of fishing management operations on the preserve. A colored photograph was made of the colony, later affixed to the voucher of this collection, deposited in the herbarium of the New York Botanical Garden. A second collection was made in June, 1955, the specimens gathered and prepared with special care so that the trichotomous leaves, nearly all bladder-bearing, and the delicate, slender habit typical of this species are well exhibited. This collection is deposited in the same folder with the first one.

U. biflora was first reported from New Jersey by Taylor (1915). Taylor cited the locality as "Georgetown, Sussex County, New Jersey." Sussex County is largely Alleghenian upland, and unlikely to offer acceptable habitat for *U. biflora*. Furthermore, there is no "Georgetown" in Sussex County. Mr. Joseph Monachino, of the New York Botanical Garden Herbarium, wrote me that there was a specimen there (which I later examined), collected by N. L. Britton (No. 23), bearing, in Britton's handwriting, the legend: "edge of pond near Georgetown," with a printed label: "Plants from Sussex County, Delaware, July 5, 6, 1908." There is, of course, a Georgetown, Sussex County, Delaware, and Taylor probably based his report on this specimen. Subsequent Floras carried on this misconception.

Closely related to *U. biflora*, and with a remarkably similar

range, is *U. fibrosa* Walt. It is a larger and coarser plant than *U. biflora*, with usually more complexly developed leaf structure. Current manuals all state that *U. fibrosa* has two types of leaves: the usual, bladder-bearing leaves, associated with the scape, and specialized, purely vegetative leaves, not bearing bladders, on certain more remote branches, crowded on the branch, finely dissected, forming a plumose, natant organ. *U. biflora* suffices with the bladder-bearing leaves; it developes no specialized vegetative branches.

In perusing considerable herbarium material of both species, the writer felt uneasy about the character of specialized vegetative branches assigned to *U. fibrosa*. Some specimens clearly exhibited these natant organs; others had either lost them, or perhaps never had them. Unless carefully prepared, dried Bladderworts can be notoriously difficult to identify, and this might account for some of my difficulty. Yet there are other reasons for questioning the constancy of vegetative leaves in *U. fibrosa*. As Gleason (1952) points out, both *U. biflora* and *U. fibrosa* may become stranded, in which case, vegetative leaves may not be detected in the latter. There is evidence to indicate that *U. fibrosa* may prefer deeper water than *U. biflora*. This I observed in New Jersey. Collectors of *U. biflora* make more frequent reference to especially shallow sites than do collectors of *U. fibrosa*, judging from herbarium sheet notations.

The plumose, natant, vegetative branches of *U. fibrosa* are analagous to the finely dissected leaves of *Ceratophyllum* or similar aquatics in function. It has already been demonstrated that when this species becomes stranded, these organs evanesce. It would be a notable experiment to observe what might happen if a stranded *U. fibrosa* were reset in deeper water—would plumose leaves reappear? Is there a possibility that if *U. biflora* were reset in deeper water, it would develop vegetative branches? In other words: vegetative branches are not always present as a key character of *U. fibrosa*—are they really inherently specific, or are they a physiological response to environment?

Extensive field studies, experiments, and cytotaxonomic investigation are needed for a true, intrinsic concept of Bladderwort taxonomy. These fascinating aquatics offer a nicely concise problem for taxonomic research, and a grand oppor-

tunity for a student to make a major contribution to botanical knowledge.

In the absence of well-exhibited leaf characters, *U. biflora* may generally be distinguished from *U. fibrosa* by dimensions. *U. biflora* is delicate, with a filiform scape, less than a millimeter in diameter, and from five to fifteen centimeters long from the top submersed branch to the lowest peduncle. *U. fibrosa* is much coarser, with a scape 1 to 2 millimeters in diameter, and from ten to twenty or more centimeters in length.

To Mr. Joseph Monachino, of the New York Botanical Garden Herbarium, I extend my sincerest appreciation for much that is basic to this paper.—1258 BEACH ROAD, RIVIERA BEACH, FLORIDA.

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YONKERS WOOL MILL PLANT RECORDS

JOSEPH MONACHINO

FOR years to come Fernald's 8th Edition Gray's Manual of Botany and Gleason's The New Britton and Brown Illustrated Flora will offer ready means of comparing divergent views on the plants of the northeastern United States and adjacent Canada. The Manual, in general, has a more inclusive approach and admits more taxa, particularly of the minor kind, than the New Britton and Brown. Some adventive or introduced species, like *Setaria Faberii* Herrm., *Cynosurus echinatus* L., *Polygonum perfoliatum* L., and *Phellodendron japonicum* Maxim., appear in the former but not in the latter work. There are, however, several noteworthy instances where the situation is reversed. *Scirpus mucronatus* L. and *Scirpus Tabernaemontani* Gmel. are two examples. Incidentally, both of these were collected on ballast at Camden, New Jersey, and probably both were from the Isaac C. Martindale herbarium dated 1877 or about that time; yet the New Britton and Brown accords

one full standard treatment, while relegating the other to a footnote under *S. acutus* Muhl. A. A. Beetle in 1941 annotated the Martindale specimen as *S. lacustris* L. var. *Tabernaemontani* (Gmel.) Doll. *S. lacustris* is mentioned by Gleason in a footnote under *S. validus* Vahl., whereas it is disregarded by Fernald.

Waifs collected in the vicinity of the Yonkers Wool Mill, New York, at the close of the 19th Century offered a number of species for the New Britton and Brown: *Pennisetum ciliare* (L.) Link., *Andropogon Ischaemum* L., *Cenchrus barbatus* Schum., *Chloris ciliata* Sw., *Aegilops crassa* Boiss., *Scirpus Holoschoenus* L., *Veronica campylopoda* Bois. The last species is merely noted in the discussion under its genus, while the others are systematically described and illustrated. However, the collection records for all are about the same, as far as the eastern range is concerned. *V. campylopoda*, often merged with *V. biloba* L., has become widespread in northwestern United States (Utah, Idaho, Montana, Washington). These old records are ignored by Fernald, it would seem deliberately so, since most of them had been published (Torreya **37:** 15. 1937; Rhodora **23:** 21. 1921).

There are six additional species, collected by E. P. Bicknell (without collection numbers) in Yonkers from 1890 to 1898, which (with the exception of *Herniaria cinerea*) do not appear in any of the floras of our area. The specimens were recently discovered and identified by the writer at the New York Botanical Garden, where they had long reposed amongst unnamed material.

Herniaria cinerea DC. About the Yonkers Wool Mill, July 8, 1894 and July 20, 1898. Flowers in the specimen examined have only two stamens. The species is but little different from *H. hirsuta* L. Native to Europe, North Africa and the Near East.

Polycnemum arvense L. Collector not designated (probably E. P. Bicknell), Yonkers Moquette Mill, July 29, 1890. *P. majus* A. Br. has been reported from Ontario. The bracts in the Yonkers specimen are shorter than the sepals, a character which distinguishes *P. arvense*. Native to Europe and the Near East.

Gypsophila porrigens (L.) Boiss. About the Yonkers Wool Mill, September 17, 1898. Our specimen is comparatively small, with shorter leaves and shorter pedicels than usual. Native to the Near East and introduced in Europe.

Helianthemum salicifolium (L.) Mill. About the Yonkers Wool Mill, July 8, 1894. Native to Europe, North Africa and the Near East.

ANDROSACE MAXIMA L. About the Yonkers Wool Mill, July 8, 1894. A fruiting specimen; seeds approximately 2 mm. long; calyx-lobes entire. Native to Europe, North Africa and the Near East.

LIMONIUM LEPTOSTACHYUM (Boiss.) Kuntze. About the Yonkers Wool Mill, June 26, 1898. Described by Boissier in DC. Prod. **12:** 669 (1848). There is an excellent photograph of the multispicate form of the species in Acta Horti Petropolitani **35:** t. 2 (1921). Native to Persia and the adjacent country north (Bukhara, Samarkand).

Another two species are represented by Bicknell specimens inadequate for determination, but may be the following: *Panderia pilosa* Fisch. & Mey. About the Yonkers Moquette Mill, September 1, 1894; flowers too young. Yonkers Cotton Mill, July 1, 1894; sterile. Closely related species have been proposed. Our sterile specimen has the hairs spreading as described for *P. turkestanica* Iljin (*P. pilosa* Auct. Turkest. non F. et M.). Native to the Near East. *Convolvulus pilosellaefolius* Desr. About the Yonkers Wool Mill, July 8, 1894; flowers too young. Native to the Near East.

The species from Yonkers listed above hardly can be considered actual members of our eastern flora. Whatever interest they may have is chiefly historical. What are the chances of *Limonium leptostachyum* ever appearing in the United States again? For that matter, what are the chances of *Thismia americana* N. E. Pfeiff. again being found in the vicinity of Chicago! It is not always easy to decide what elements to include in a manual primarily designed for the identification of the plants of an area.—NEW YORK BOTANICAL GARDEN.

CORREA DA SERRA AND AMERICAN BOTANY.[1]—The Portuguese diplomat and botanist Correa da Serra (1750–1823) is not often remembered in American botany but he influenced many phases of its growth during the early Nineteenth Century. Indeed, historians often neglected Correa; his name does not appear in the indices of either Henry Adams's or John B. McMaster's extended histories. Arriving an exile from France aboard the American warship, U. S. S. *Constitution* in 1812, then sixty-two years of age, he lived most of the next eight years in Philadelphia. There he met the "American illustrious" through letters of introduction from the "European illustrious." He was an

[1] The Abbé Correa in America, 1812–1820. The Contributions of the Diplomat and Natural Philosopher to the Foundations of Our National Life. By Richard Beale Davis. Trans. Amer. Philos. Soc., vol. 45, pt. 2, pp. 110, 6 *figs.* May, 1955, $2.00.

admired and admiring friend of former President Jefferson. Three years after Correa's death Jefferson wrote of him to Dr. John P. Emmet: "I suppose you were well acquainted, by character, if not personally, with the late Abbé Correa, who passed some time among us, first as a distinguished savant of Europe, and afterwards as ambassador of Portugal, resident of our government. Profoundedly learned in several other branches of science, he was so above all others in that of Botany; in which he preferred an amalgamation of the methods of Linnaeus and of Jussieu, to either of them exclusively." Professor Richard Beale Davis of the University of Tennessee's Department of English has brought together the correspondence of Abbé Correa in America, 1812–1820, in a satisfying documented commentary. Davis considers Correa's botanical contacts in some detail (pp. 112–115), and the plant references appearing in his letters are noticed *passim* in this 110-page memoir. There are 26 "botanical names mentioned" in the index. Abbé Correa had three close friends in Philadelphia: Zaccheus Collins, William Maclure, and John Vaughan. The quartet supported Thomas Nuttall in his expedition to Arkansas, 1818–1820, and he dedicated his *Journal of Travels into the Arkansa Territory* to them. Earlier Nuttall had dedicated his *Genera* (1818) to Correa.

The Abbé took a lively interest in plant morphology and physiology, in circulating planting stocks, seeds, and information among a wide circle of correspondents beginning in 1772, when as a student he was corresponding with Linnaeus, to later years when he was in touch with Thouin in France, and Joseph Banks, Robert Brown, and Salisbury in England. Correa and Banks examined the Lincolnshire coast together and their account was published in the *Philosophical Transactions*. Colmeiro summarized Correa's pre-American years in 1858 but Professor Carvalho published "the most recent, detailed, and scholarly study" in Lisbon in 1948. Correa was never an important collector in the herbarium sense, however, and few, if any, sheets bearing his name exist in the Academy of Natural Sciences' Herbarium—I have seen none. Davis emphasizes that Correa's real service was in his personal contacts with amateurs, some of whom became important figures probably stimulated by him

The Quaker physician and botanist, William Baldwin, wrote to Dr. William Darlington: "On my passage from Elkton to Baltimore I became acquainted with the 'Chevalier Correa de Serra'—who, I suppose, is known to you. I was pleased with his plainness: and had a good deal of botanical talk with him." Dr. Baldwin had earlier characterized Abbé Correa to Henry Muhlenberg as an "excellent Botanist."[2]

Correa's 16-page pamphlet entitled *Reduction of all the Genera . . . in the Catalogus . . . of the late Dr. [Henry] Muhlenberg to the Natural Families of Mr. DeJussieu's System*, Philadelphia, 1815, of which Professor Davis reproduces the title page for us, was published both separately and as an appendix to the second edition of Muhlenberg's *Catalogus* (1818) and in somewhat altered presentation as an appendix to the New York edition of James Edward Smith's *A Grammar of Botany* (1822). Correa considered Stephen Elliott America's greatest botanist; others who came under his influence included Jacob Bigelow, Thomas Cooper, Francis Walker Gilmer, Reuben Haines, George Ord, Thomas Say, and Caspar Wistar. Dr. Bigelow wrote that he (Correa) "did me the honor to peruse my herbarium, and aid me with his explanations."[3] This was probably in the year 1813 when the two made botanical excursions together in the vicinity of Boston. Correa must have associated with Benjamin Smith Barton, whose botanical lectures at the University of Pennsylvania he continued after Barton's death, but Professor Barton's increasing disability may have minimized those contacts. Five persons are conspicuous for their absence from Correa's correspondence as Davis has reported it: Dr. David Hosack (1769–1835), John Eatton LeConte (1784–1860), Charles Alexandre LeSueur (1778–1846), William Bartram (1739–1823), and Dr. Gerard Troost (1776–1850). Of course letters to or from them may yet come to our notice. Davis refers (p. 107) to a 'literary circle' described by the New York physician, John W. Francis, where Abbé Correa had been a guest. This was surely Dr. Hosack's 'circle' and a search of the Francis papers in the New York Public Library may establish this contact.

[2] Davis does not mention William Baldwin (1779–1819) among Correa's American acquaintances but cf. Darlington's *Reliquiae Baldwinianae*, 114, 172, 250, etc., 1843.

[3] Cf. George E. Ellis, Memoir of Jacob Bigelow, M.D., LL.D., Proc. Mass. Hist. Soc. p. 36 (of reprint), 1880.

Connections which do not come to notice at once will perhaps be detected by a closer scrutiny of the Correa correspondence. For example, Thomas J. Wray of Augusta (p. 103) was a correspondent of Nuttall's and there are collections both at Philadelphia and in the British Museum (Nat. Hist.) labelled in Nuttall's hand as from him. Nuttall evidently met Wray in Augusta sometime in the Fall of 1815. Correa reached Augusta by October 16th that year and Wray must have met the two visitors about the same week if indeed they were not travelling together (?).—Joseph Ewan, tulane university, new orleans, la.

Nomenclatural Change in the Grass Genus Echinochloa.—The name *Panicum muricatum* Michx. (1803) is invalidated by the earlier use of the binomial by Retzius (1786). Palisot de Beauvois (1812) transferred this species to the genus *Setaria* and in the body of his work merely lists *Setaria muricata;* however, on page 178, he said, "*Panicum muricatum* Michx. equals *Setaria*". This name, invalid in *Panicum*, is valid in *Setaria* since there is no earlier binomial which is identical. The combination *Setaria muricata* is four years older than *Panicum pungens* Poir. (1816) and seventeen years older than *Oplismenus muricatus* Kunth (1829), the basonym discussed by Shinners (1954).

Therefore, Beauvois' "muricata" is the oldest epithet used in a legitimate combination for the taxon; and as such, Fernald's (1915) use of the epithet in *Echinochloa* was valid, although in 1935 he adopted the name *Echinochloa pungens* because of the homonym rule.

Since the parenthetical citation refers to the first legitimate use of the epithet, the correct binomial for the indigenous barnyard grass is *Echinochloa muricata* (Beauv.) Fernald.

The essential synonymy is as follows:

Panicum muricatum Michx. 1803. Not Retzius 1786.
Setaria muricata (Michx.) Beauv. 1812.
Panicum pungens Poir. in Lamarck's Encycl. Méth. Bot. 1816.
Oplismenus muricatus (Michx.) Kunth. 1829.
Echinochloa muricata (Michx.) Fern. 1915.
Echinochloa pungens (Poir.) Rydb. 1931.

The writer wishes to express his appreciation to Dr. H. W. Rickett of the New York Botanical Garden for his assistance.—DAVID E. FAIRBROTHERS, BOTANY DEPARTMENT, RUTGERS UNIVERSITY, NEW BRUNSWICK, N. J.

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TWO PLANTS NEW TO THE ILLINOIS FLORA.—While examining some of the unmounted material of my 1951 collections, I found one species that apparently had not been reported previously from Illinois. During recent field work in Montgomery County, I located another species not reported from the state. The specimens, cited below, are in the herbarium of the Illinois State Natural History Survey (ILLS).[1]

DICLIPTERA BRACHIATA (Pursh) Spreng. Fernald[2] gave the range of this species as "Fla. to La. and Okla., n. to se. Va., s. Ind., Mo. and e. Kans." Deam[3] cited its occurrence along Little Pigeon Creek, a stream that discharges into the Ohio River in Warrick County, Indiana. Palmer and Steyermark[4] reported the plant from a number of counties in east-central and southern Missouri. Now southern Illinois can be included in the range. I found this species east of Joppa, in a bottomland woods along the Ohio River. The plant had flowered and was in fruit when I made the collection. The herbarium sheet includes the following data: MASSAC CO.: Bottomland woods, east of Joppa, September 20, 1951, *R. A. Evers 32944*.

[1] ILLS is the abbreviation given by Lanjouw and Stafleu in the Index Herbariorum, Part I, 1952, for the herbarium of the Illinois State Natural History Survey.

[2] Gray's Manual of Botany, ed. 8. 1950.

[3] Flora of Indiana. 1940.

[4] Mo. Bot. Gard. Ann. 22: 646. 1935.

Haplopappus ciliatus (Nutt.) DC. Fernald (l. c.) recorded the range of this plant as "w. Mo. to Colo., s. to Tex. and N. M." Illinois is east of this range. Nevertheless, I found this species growing on the shoulder of an intermediate type bituminous road—often referred to locally as a black-top road—between Fillmore and Van Burensburg, in Montgomery County. South of Fillmore only a few plants grew on the shoulder, but north of Van Burensburg many plants occupied the shoulder at the edge of the black-top pavement for some distance along the highway. Herbarium sheets contain the following data: Montgomery co.: Roadside, 2 miles south of Fillmore, August 12, 1955, *R. A. Evers 48782;* roadside; north of Van Burensburg, August 12, 1955, *R. A. Evers 48819.*—Robert A. Evers, Illinois State Natural History Survey, Urbana.

Juniperus communis var. saxatilis from Mount Washington.—In checking over some old botanical material this summer, I discovered a specimen of a juniper that I had collected on the cone of Mount Washington in 1939. After studying it carefully, I became convinced that it was *Juniperus communis* L. var. *saxatilis* Pallas. I showed it to Professor A. R. Hodgdon and to Professor A. S. Pease, both of whom had no hesitation in confirming the identification.

This variety is known from Mount Katahdin, from the coast of Maine, and from the coast of Massachusetts, but there is no record of it from New Hampshire. No juniper has been collected from Mount Washington, although var. *depressa* Pursh occurs sparingly in Coos County in old fields and on ledges. It might be expected that birds would occasionally carry the fruits above the tree line, allowing small colonies to become established. It is difficult to account for the presence of variety *saxatilis* here. I am anxious to relocate the station and collect more material, but was unable to do so last summer. My sheet has been deposited in the Herbarium of the New England Botanical Club.—Frederic L. Steele, St. Mary's-in-the-Mountains, Littleton, N. H.

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